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Harvard Medical School Alumni Association



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BULLETIN OF THE HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION

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VOLUME I

MARCH, 1927

NUMBER 1

The Harvard Medical School Alumni Bulletin

I write to tell you how much value I think the Medical School Alumni Bulletin may have. There is great importance in anything that will keep the alumni in touch with the School, let them know what the instructing staff are doing, how they are attempting to teach the laboratory and clinical subjects as closely related parts of one great subject, and all as means to the treatment of patients.

One of the serious difficulties encountered by our institutions of higher learning is the ignorance on the part of the alumni of the changes that have taken place since they graduated, and their consequent inability to understand the progress that has been going on, any one part of which seems to them inconsistent with what they suppose the rest of the institution to be.

Therefore I welcome most heartily the foundation of this new bulletin.

Very truly yours,

A. LAWRENCE LOWELL

TO THE ALUMNI

The Bulletin as a publication of the alumni association comes forward as a result of the deliberations of your council. During the activities of the New Dormitory Campaign committee it was discovered that a large majority of the Alumni had lost contact completely with the Medical School. They appeared to be totally ignorant of its activities and unsympathetic with its aims. This disclosure came in the nature of a surprise to many who have remained in close affiliation with the school. Moreover it was apparent that nothing but carefully directed effort could bridge this chasm of indifference.

Before opening the campaign for funds it was essential to establish the need and desirability of this new departure in the student life at the Medical School. Furthermore, it was necessary to show that an expenditure of more than a million dollars was warranted for the enterprise. The alumni, and they alone, could answer this question with force and effect. Every graduate was familiar with the loose, lonely and unhealthy life which he and his contemporaries endured while students at the Medical School, and it was considered particularly appropriate to have the Alumni on record in favor of the dormitory plan. Therefore your President, Dr. Elliot P. Joslin excited the feeling among members of the council that the endorsement and the moral support of every graduate of the school should be manifested in some way. It was felt that the voices of thirty-five hundred alumni, giving some expression of hope that such adverse influences upon the educational life at the Medical School would be remedied, could not fail to arouse enthusiasm among prospective donors.

The Campaign Committee, then, with this object in view, solicited the alumni and reported the discovery of a marked degree of indifference, widespread among the graduates of the school. Furthermore, it was learned that this attitude on the part of the alumni was due to an almost complete dispersion of interest in the Medical School after receiving diplomas.

Very little news covering the important activities of the school ever reached the graduates and it required only a normal sense of modesty and unobtrusiveness for the drifting process to continue always in one direction. The writer can disarm any apprehension which may exist touching upon the attitude of the school toward alumni who seek scientific knowledge, for he has frequently imposed his needs upon members of the school personnel and often solicited advice, aid, material and space with never failing success. On all sides and at all times he has found evidence of the most friendly interest. To possess rightly a sense of proprietorship in a Medical School of such glorious traditions as that through which we labored for the degree of M.D. is an heritage of genuine worth. That a due sense of pride in its achievements and an active interest in the fulfillment of its aims should exist among all its graduates I am sure is the desire of President Lowell and the Medical School faculty. It is sure to be of mutual advantage. The alumni are likely to be wiser and the school happier as a result of this bond of acquaintances sought in the dormitory cause by the sympathetic mind and the genuine solicitude of your Ex-President.

The impress upon the medical profession in this age will be made by the medical schools. They impart to medical thought a large portion of its character

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and they should not be hampered in their pursuits of scientific truths only to be uncovered by means of the most extended privileges of research.

The Harvard Medical School is of humble origin. Its first activities nearly a hundred and fifty years ago were held in the basement of a college hall at Cambridge. Its sponsors then as now labored at investigation of truth. Dr. John Warren and Dr. James Jackson, its founders, were men of exceptional intellects. Their age was distinguished for a remarkable diffusion of anatomical knowledge. Dr. Warren was probably the first to give a course of lectures in Anatomy in New England. They were delivered in 1780. At that time anatomy was considered the alphabet of the healing art. Following these pioneers we find a long list of illustrious names, of lives faithfully devoted to the study of philosophy and medicine. They gave unstintedly of their time, effort and knowledge in order that the Harvard Medical School might keep its high rank among the best institutions of medical education throughout the country. Its ever changing personnel has never altered its aims or ideals. Today it is an imposing structure, attestation of an improved spirit in the medical thought of an age when human ingenuity has dominated the forces of nature as never before in the world's history. Within its walls numerous and splendid discoveries are made and contributed to the welfare of the human family without tax or exultation. It has become a temple of refuge for all students who no longer search after the wonderful, but adhere to a love of truth as it finds expression on the enduring foundations of science and common sense.

Contributions from its research laboratories have indicated clearly that the

school has not only kept pace with the advance of the sister sciences but in its more rapid strides has left them behind. It is, therefore, with this Medical School that you as graduates should be united for the advancement of medical education, for an unrestrained liberty in the pursuit of scientific truth and for the alleviation of human suffering. The moral support of the alumni is essential for a full realization of these aims. Not only is there needed a moral support but a missionary service can, and, it is hoped, will be rendered the school by its graduates.

Through the medium of the Bulletin which for the present, at least, will be sent to the alumni without charge, your council plans to supply every member of the Association with news concerning the activities of the Medical School, references to the more important problems which are engaging the thought and zeal of laboratory experts, recent discoveries, changes in the system of medical instruction, with personal items renewing the acquaintance of the school with its graduates and the graduates with each other.

PHILEMON E. TRUESDALE, *President*.

The purpose of this BULLETIN has been mentioned by our president in his message. This is the first number. We hope that succeeding ones will be of equal or greater interest, but this depends largely on your support and cooperation. We want to know what you think of it and how you feel it can be improved. We plan to enlarge our Alumni Notes and need your help in this. Changes of address are important to us. Please fill out and return the enclosed post card NOW!

"VANDERBILT HALL"

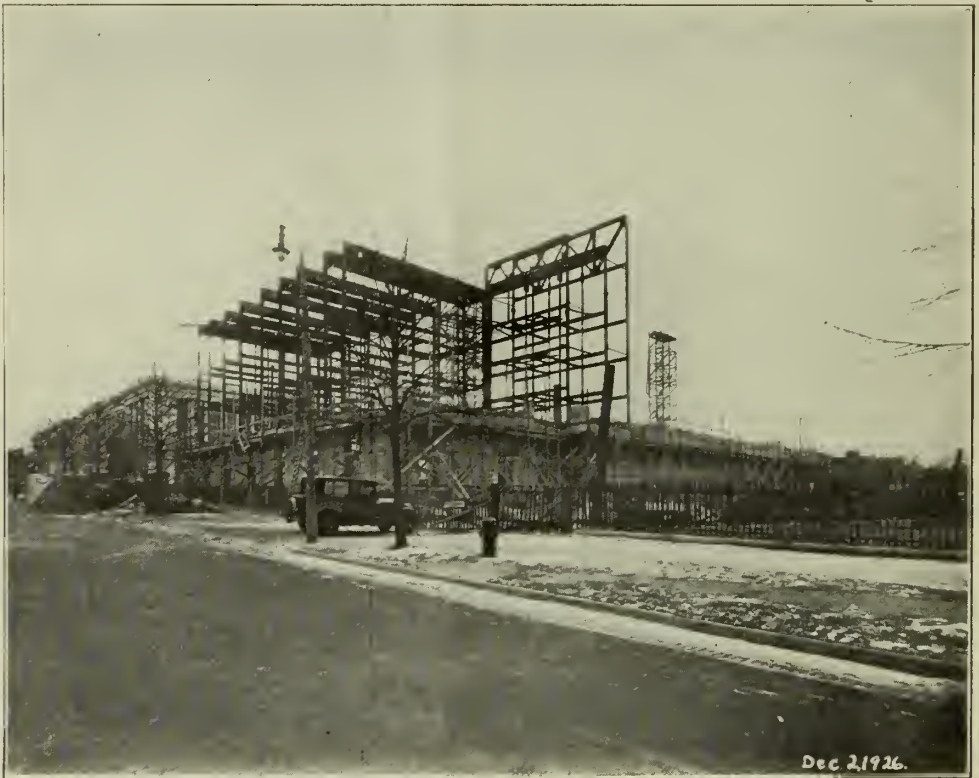
The Harvard Medical School Dormitory A History

The Harvard Medical School was moved into its new buildings in September 1906. The need of a dormitory in connection with this new development was felt from the very first.

It was Dr. J. Collins Warren '63, who with Dr. Henry Pickering Bowditch, had been so successful in securing the Medical School itself, who particularly appreciated that the students now had a good place to work but no place to eat, sleep or exercise. Through the efforts of Dr. Warren early in 1908 funds were

secured, sufficient to lay out a plan for a "Harvard Medical School Union" to be placed opposite the school on Longwood Avenue (on the site of the present dormitory) and to include tennis courts and a dormitory. In March 1908, this plan illustrated by sketches made by the architects Messrs. Shepley, Rutan and Coolidge, was published in the Harvard Bulletin.

In 1912 a committee of students called together by Dr. Warren again expressed the need of a dormitory. In letters to



Dormitory from Louis Pasteur Avenue

Dr. Warren their desires were well substantiated by Dr. Harold C. Ernst, the Chairman of the Students Health Committee and member of the Students Association and by Dr. Henry A. Christian, Dean of the Medical School. Soon after came the war. Further development of the enterprise was interrupted during the period of war which followed.

Dr. Elliott P. Joslin was elected President of the Harvard Medical Alumni Association on June 20, 1922. Immediately, renewed interest and inspiration was manifested in the development of the dormitory idea. Within a week plans for a medical school dormitory were being seriously considered by the members of the Medical Alumni Council. Obviously a dormitory for the students was essential, and Dr. Joslin maintained that a campaign for funds, if inaugurated, would be ultimately successful.

But during that summer another project was on foot at Harvard. The campaign to raise ten million dollars to provide for a school of business administration, a much needed chemical laboratory and a new museum of fine arts was to be opened in the fall. This campaign had been contemplated before our dormitory plan took shape. Therefore when President Lowell informed the Medical Dormitory Committee that requests for contributions for the dormitory could be made to no one except graduates of the Medical School, we were quite naturally disappointed. As President Lowell explained, men of means take infinite pleasure in doing good with their money. To ask a man to help in a relatively small campaign and thus spoil his opportunity of giving a larger sum for what might seem to him a more interesting and worthy object would be unfortunate, and inci-

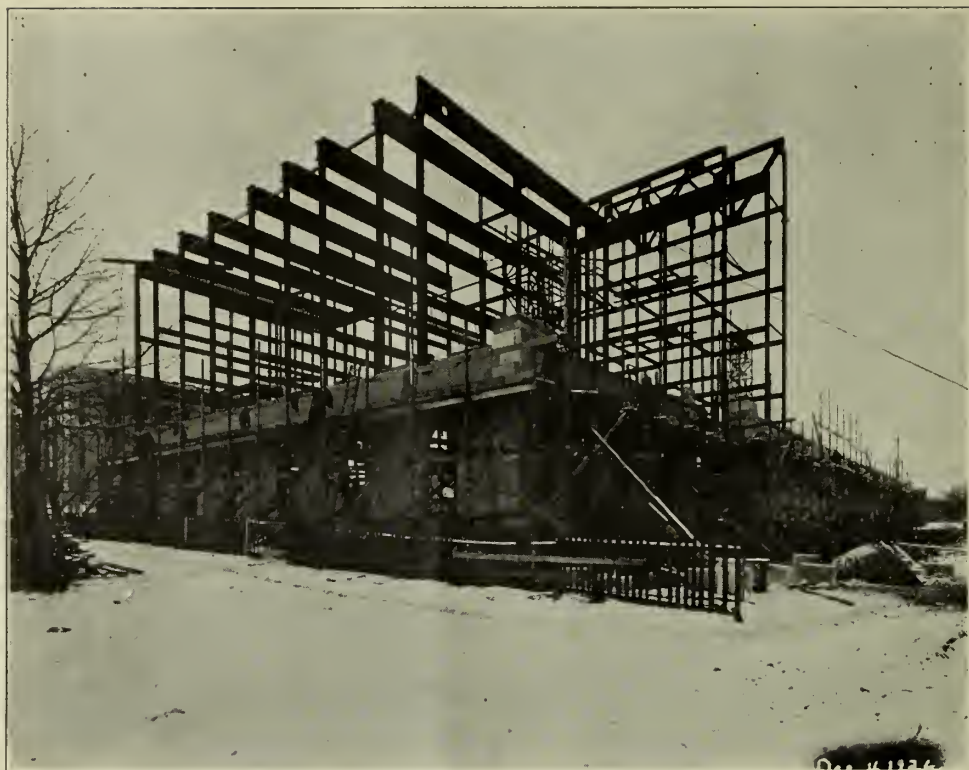
dentally Harvard University as a whole would receive a small gift in the place of a much larger one. That this policy of holding off the dormitory campaign was quite correct has been clearly shown by later developments.

Meantime, however, Dr. Joslin and his committee were not inactive. To Dr. James H. Means belongs the credit of securing the interest of Mr. Phillips Ketchum. Throughout our campaign, Mr. Ketchum has been of inestimable service. His legal training, his business experience and his natural common sense, have helped us not only with such business problems as to plan our collection system, to purchase the land, to arrange for tax remissions, to write and arrange our circular letters of appeal, but he has been at all times a constant source of inspiration and of general comfort to the Committee. In the spring of 1923, the need of a dormitory was confirmed by the enthusiastic answers to a questionnaire submitted to the medical undergraduates, fifty per cent of whom declared their readiness to move into the building when it was ready.

It was decided by the Committee and by President Lowell that in case our building should be subscribed for, that Messrs. Coolidge, Shepley, Bulfinch and Abbott would be the architects. In view of this it was easy to secure a perspective drawing of the proposed dormitory which might later be used for advertising purposes.

Meantime plans for our own campaign were greatly simplified by many exceedingly helpful conferences with Dean Donham and his cordial staff at the Business School.

By September 1923, the names of Harvard Medical School graduates throughout the world had been divided into groups. In each group the name of one



Dormitory looking toward Medical School

man to act as a District Chairman had been selected. To these men was explained the need of demonstrating universal approval and support of the dormitory idea among the graduates, by securing from each one some gift regardless of its size. It was felt, and quite correctly, that the fact of a large number of contributions from doctors would be very important in showing that the doctors as a whole had done their part in securing the dormitory.

This plan succeeded because, when Mr. Baker's wonderful gift to the Business School was announced on June 2, 1924, our figures showed that 1322 doctors had subscribed a total of \$89,346.85. And now the "lid was off" and our real campaign for gifts from lay friends could begin.

Dr. Elliott C. Cutler presented the tentative drawing to Mr. Harold S. Vanderbilt (Harvard '07) who was quick to see the need for teaching future doctors the value of exercise as at least one factor in health preservation, and so in March 1925, to our great joy, Mr. Vanderbilt generously provided that a gymnasium should be included in the dormitory and gave \$125,000 to this purpose. By May 1925 the total contributions including Mr. Vanderbilt's gift had reached the figure of \$443,501.10 and meantime the University had agreed to invest in the dormitory the sum of \$300,000, this being the largest amount on which the net dormitory income would pay an adequate return.

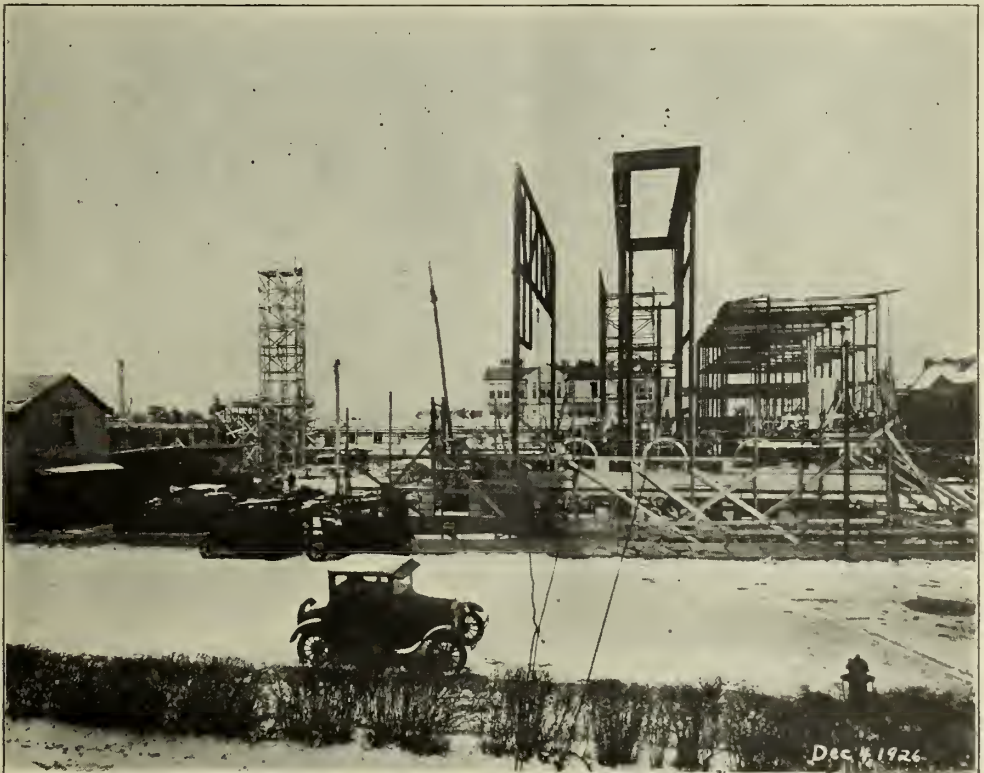
But how to secure the remainder necessary was an immediate and perplex-

ing problem. We worried for only a short time because in July 1925, Mr. Vanderbilt's letter inquiring for the status of the Dormitory Fund and asking for the balance necessary to complete the entire project showed us that he was still interested. The remainder of his gift, totalling \$700,000 was made in August 1925 and our campaign was ended. The name of "Vanderbilt Hall" applied to the building as a whole seems most appropriate.

During this past year, the study, revision, redrafting and elaboration of the plans has been a slow but successful task. Mr. Henry R. Shepley, the architect in charge, has been always considerate of all suggestions which the committee has made. The final drawings have been demonstrated to the commit-

tee by him and have met with entire approval.

Our dormitory will be comfortable and liveable without being luxurious. It will house 252 students. The typical rooms are 17 ft. long by 10 ft. wide; they can be used in pairs by two men, with two beds in one and two desks in the other, or they can be used singly with a bed and desk in each. There are a few suites. The accompanying plan shows the ground floor. The entrance from Pasteur Avenue opens to a lobby with office, mail boxes, toilets, reception room and small library. To the left is the living room 56 ft. by 34 ft. To the right at the end of the corridor, the entrance to the dining hall is down a few steps and through a center door onto a commanding balcony. Henry Pickering



New Dormitory from the Medical School

Bowditch Hall is 92 ft. long by 36 ft. wide. It will be a handsome room and worthy of the name it bears. Beyond it and over the kitchen is a small dining room which can be used for meetings or private dinners.

At the other end of the building is the Vanderbilt Gymnasium, large enough for Varsity Basketball. Over it will be five squash courts.

The actual construction began on August 15, 1926, and the architect has given

every assurance that the entire building will be ready for occupancy in September 1927. The photographs on this page show the building as taken from (See below). Already construction has reached the second floor and progress is most satisfactory. The hope is that a considerable part of the structure will be walled in and covered over before the new year so that the work will not be delayed by weather conditions.

General Secretary.

THE SCHOOL OF INDUSTRIAL HYGIENE

BY FREDERICK C. SHATTUCK, M.D.

The Harvard Medical School Alumni Association has justified its existence and the work which has been lavished upon it. The impetus which it gave to the Medical Student's Dormitory ranks easily first in its achievements. Among its other credits is that within its Council originated the School of Industrial Hygiene. The matter was brought up for discussion at a meeting December 4th, 1917, resulting in the following vote:

"The Council of the Harvard Medical Alumni Association begs the Faculty of Medicine to consider the advisability of building up, with the aid of and in connection with the Employment Bureau of the Association, a centre of industrial medical employment, and, in case such a measure should be deemed advisable, also to consider the best means of putting it in operation."

This vote led to study of the question, with a broadening of the scope of the plan, and the Faculty of Medicine, March 29, '18, passed a vote, too long to quote here in full, to the effect that teaching and research in indus-

trial medicine should be begun under the Department of Preventive Medicine and Hygiene, provided that at least \$25,000 a year for five years could be secured from outside sources. Promptly, thereupon, steps were taken to raise money chiefly from corporations, among whom some far sighted ones had already provided medical supervision of varying quality for their employees. The time was propitious, with industry and profits at war time maximum. The largest subscription asked was a thousand a year for five years. Thus about \$35,000 a year was secured, nearly all from the corporations for whose interest it seemed to be to help a training school for their health activities. None such was in existence. It was clearly stated that the appeal savored neither of philanthropy nor charity; that it was a cold business proposition with two immediate main objects in view:

First, to provide a school in which industrial physicians could be trained for their jobs instead of being forced to try to learn the same after having undertaken

them. The effort had not always succeeded, and the viewpoint of the trained man is apt to be from a higher level than that of the untrained.

Secondly, the plan included an uncommercial university group of experts in all branches of science, such as no commercial enterprise can command, ready to aid in the prevention, cure and study of industrial conditions inimical to health. Here among the notable services which have been rendered in this line only those related to industrial manganese and lead poisoning can be mentioned.

The School is by far the largest contributor in that it gathers the men, furnishing them with housing, heat, light and equipment. One private gift should be mentioned.

Mr. Francis L. Higginson was told the scheme in outline, solely that he might advise as to how to get hold of a possibly useful executive. There was no thought whatever of asking him for money; but not long after he gave \$51,000, providing \$10,000 a year for five years. Two-thirds of this fund is still in hand. That gift is significant as expressing the judgment of the enterprise by an unusually keen man of affairs, who was as discriminating as generous in his gifts which were usually, as in this case, made without solicitation or public announcement.

It takes time for the corporations in general to realize that they are really securing at small cost a sort of insurance, something similar to fire insurance, against a possible loss which it is hoped will not occur. The industrial depression of '21 and '22 retarded progress, the diminution or loss of profit leading to orders to "cut to the bone." As a result some plants curtailed or even ceased their health pro-

grams. Those which had not yet begun held back, and subscriptions for the second five-year period fell off somewhat. A real need has been met and the future seems assured.

Then came the Journal of Industrial Hygiene, I believe the first of its kind in the field.

A further development was the six and a half years' study of Mercantile Health, financed by some twenty-five department stores in Boston and other cities. This branch was headed by Dr. Arthur B. Emmons, 2nd, who has embodied the results in a book¹ which cannot fail to be of service. Many alumni recall the remarkable report² made by Dr. Emmons when secretary of the Association.

When the School of Public Health was established with the aid of the Rockefeller Foundation, naturally the Schools of Industrial Hygiene and Tropical Medicine were absorbed into it. They are, of course, in essence, divisions of preventive medicine, one in Industry, the other in the Tropics. The development of tropical resources is daily becoming more vital to our civilization, and is largely based on health. It was modern medicine which conditioned the Panama Canal through the mastery of malaria and yellow fever.

Industrial Hygiene brings no blush of shame to its parent, the Harvard Medical School Alumni Association, and generations of medical students will rise up and bless the Association for its leadership in the Medical Students' Dormitory, which bids fair to prove one of the longest forward steps the School has taken in its history.

¹Health Control in Mercantile Life. Harpers. 1926.

²The profession of medicine, a collection of letters from graduates of the Harvard Medical School. Cambridge. 1915.

THE HISTORY OF THE PHYSIOLOGY DEPARTMENT OF THE HARVARD MEDICAL SCHOOL

BY WALTER B. CANNON, M.D.

Professor of Physiology

An informal talk to members of the Physiological Conference in the H. P. Bowditch Library of Physiology and Biochemistry in the Harvard Medical School, March 29, 1926

In one of his essays Mr. Crothers has remarked that there is no geographical boundary between the East and the West; that the line is drawn where the look changes from day before yesterday to day after tomorrow. I think there is a similar line between middle age and senility—it lies where the look changes from the future to the past. It has been said, furthermore, that nobody under sixty years of age has a right to reminiscences, and even after that any one who engages in reminiscences is showing the beginnings of the end. I realized clearly these signs of senescence, and two years ago when I was asked to talk about the history of the laboratory I put it off, and again last year I put it off, but this year I succumbed to the persuasion of Dr. Ferry and agreed to tell about our early history. I shall not say very much about recent history, a part of which you all, or many of you, have been.

As an historical fact, my experience here does reach back some time or some space-time. It will be thirty years ago next fall that I entered the physiological laboratory in the old building of the Harvard Medical School on Boylston Street and wandered into the room where the apparatus was kept; there I was met by Frank Foley, the laboratory boy, who informed me that students were not allowed in the laboratory and that I had better get out. He was mistaken in his view, but he had a way with him and I consequently did get out.

At that time Dr. Bowditch was teach-

ing Physiology. He was Professor of Physiology and in 1896 had been Professor for twenty-five years. Before him Oliver Wendell Holmes had been the Parkman Professor of Anatomy and Physiology, and that meant that he had been also Professor of Histology and Physiological Chemistry. He used to say that he occupied not a chair, but a settee. As Parkman Professor of Anatomy and Physiology he was in service from 1847 to 1871, and thereafter, as Parkman Professor of Anatomy, he was in service eleven years more, making thirty-five years in all as a Professor in the Medical School.

It is not clear how many formal lectures in physiology Dr. Holmes gave. Some have stated that there were five formal lectures at the end of the course. Others have stated that there were as many as twenty. Of his interests he has written, "I have myself instituted a good many experiments with a more extensive and expensive machinery than I think has ever been employed,—namely, two classes each of ten intelligent students, who had joined hands together, representing a nervous circle of about sixty-six feet, so that a hand-pressure transmitted ten times around the circle traversed six hundred and sixty feet, besides involving one hundred perceptions and volitions. My chronometer was a horse-timer, marking quarter-seconds." He varied these experiments by having the transmissions made from hand to foot and from hand to head. I imagine

that these students must have been more co-operative than some that Professor Münsterberg tried. He used to hitch up three hundred students in this way, but somebody in the circle always started the process going out of turn. Under the conditions the results were not wholly consistent.

We have in the laboratory one piece of apparatus which has come down from the time of Oliver Wendell Holmes. It is this device for showing successive color contrast. You gaze for some time at these three colored sectors until you have clear images on the retina and then you replace them with blanks by a turn of the disc. You observe negative after-images. This apparatus was made by Dr. Holmes. It was transmitted by him to Dr. Bowditch, with the definite condition, however, that it was not to be displayed unless at the same time he explained that Dr. Holmes made it. I am keeping up the tradition in showing it to you and telling you that he made it.

There are no known experiments of a creative or productive character made either by Dr. Holmes or by students working with him. Toward the last of his service as combined Professor of Anatomy and Physiology, in 1865, Dr. J. S. Lombard was appointed Lecturer and a year later became Assistant Professor of Physiology. He gave talks and some demonstrations; and held quizzes, mainly during the summer. It is rather interesting to note that about this time (1864-67), Brown-Séquard, who was then a practicing physician in Cambridge, was a Professor of Physiology and Pathology of the Nervous System.

In 1870-71, Dr. W. T. Lusk, father of Professor Graham Lusk, now of Cornell, was invited to deliver lectures in Physiology, and according to Professor Lusk, he was also offered a position as a per-

manent member of the staff here. He refused, however, and instead went to New York, became a very successful and popular obstetrician, wrote a book on obstetrics from the physiological point of view—and had as a son a Professor of Physiology. Professor Graham Lusk has found some notes on the lectures his father read to the medical students in 1870-71 that show a rather keen insight. “What I would especially urge upon you,” he said, “is the value of physiology as a means of discipline. The mere fact that it refuses *a priori* reasonings, that its methods are experimental, and that its aims are unembarrassed by other motives than that of attaining the truth, make it a most beneficial instrument of scientific training. The history of its discoveries are full of warning against hasty or imperfect generalizations, while its most brilliant results are equally replete with encouragement for the patient but intelligent exercise of the powers of observation.” And these words regarding the use of animals for experiments and demonstrations: “The destruction of life which this may involve can hardly be objected to by those who constantly acquiesce in the sacrifice of animals for a much lower purpose, viz: the gratification of the palate. Nor can the charge of cruelty be reasonably preferred, for in anesthetics, a gift for which animals, as well as man, can never be too grateful to Boston, it is in our power to abolish pain. We do not take life wantonly, for mere sport, as many of our summer tourists do, but from a high sense of responsibility toward you as medical students, from an earnest conviction that there are certain physiological processes regarding which you not only need to be instructed, but which at least once you ought to witness for your own selves.”

Now we come to the real department, which was established by the appearance of Dr. H. P. Bowditch. Bowditch graduated from Harvard College in 1861 and started that fall to study in the Lawrence Scientific School, but the Civil War was on, and the call to arms became so strong that he gave up his academic interests and went into the Army. During the period from November, 1861 to June, 1865, he was in service as a cavalry officer, except when he was invalided home because of a wound in the right forearm. I don't remember his ever speaking about his war experience. He was very much interested, however, when the X-rays were introduced into the laboratory, to look at his arm to see whether there was any sign of the old wound.

In the fall of 1865 Bowditch resumed study under Jeffries Wyman. A picture of Jeffries Wyman at a late stage in his life hangs there on the fourth pillar of the Library. I used to have a picture of him, made when he was much younger. He had a very fine, intellectual face, a person of obvious insight and keenness. It was under him that Dr. Bowditch really got his first stimulus for scientific work. This reminiscent photograph of Professor Wyman used to hang in Dr. Bowditch's office.

In 1866 Bowditch received his Master's degree and entered the Harvard Medical School. Two years later, in 1868, he was given the M.D. degree. Since it was then suggested that he continue medical and scientific work, he went to Paris, in order to study with Brown-Séquard and to attend the clinics. He found that Brown-Séquard had no laboratory, but he managed to make arrangements with Claude Bernard and Ranvier. Shortly thereafter Kuhne appeared and told him about opportuni-

ties which he would find in Germany. Accordingly after a winter in Paris, during which he did indeed hear lectures by Ranvier and Bernard, and attended the clinics of Charcot and Broca, he went to Bonn. Meanwhile he had received letters from home which announced that he would have ample financial support if he wished to become a physiologist. In an interesting letter to his mother he wrote, "I have been feeling very happy at the prospect of devoting my whole time to scientific pursuits. I have been building all sorts of laboratories and medical schools in the air. In this labor I have been materially assisted by Coll. Warren who is quite convinced that something ought to be done to raise the standard of scientific education in our community. I mean, of course, particularly medical science." Our present medical buildings are a monument to the dreams of these two life-long friends.

Early in 1869 Bowditch went to Max Schultze, the histologist, and in September of that year he undertook the study of Physiology with Ludwig in Leipzig. Ludwig's picture you see hanging on the first column of the Library. It was in December of 1869 that President Eliot, who had been made President in May, proposed that Dr. Bowditch return to the United States to give the lectures in Physiology. Dr. Bowditch refused to be moved from his plan, however, and consequently someone else had to be found. Apparently Dr. Lusk was then invited.

The young American in the Leipzig laboratory seems to have made very early a favorable impression. The kymograph had been invented by Ludwig shortly before this, and in a letter to his mother on November 7, 1869, Dr. Bowditch reported, "Professor Lud-

wig is a very amiable and agreeable man. He must be between fifty and sixty years old, but he retains his youthful enthusiasm and a remarkable faculty of finding pleasure and amusement in trifling matters. I arranged a little apparatus yesterday attached to a metronome for the purpose of marking time on a revolving cylinder covered with smoked paper (an instrument much used in various physiological experiments), and it was real fun to see how delighted the professor was with it." This was the first use of mechanical time marking.

The companions which he found at Leipzig were various because at that time it was a place to which students resorted from all parts of the world. There he met Brunton of Scotland, Lankester of England, Mosso of Italy, Kronecker of Germany, and Ustimowitsch of Russia. They were close companions during the period of his stay.

While with Ludwig Dr. Bowditch carried on an investigation which, as you all know, became a classic in Physiology. I have here a reprint of the paper. On page 669 occurs the first description of the now well-known "staircase" phenomenon—"Wir wollen eine so beschaffene Reihe von Zuckungen unter dem Namen einer Treppe zusammenfassen." And on page 687 there is a clear description of the contraction of the heart to its greatest possible extent or not at all—quite independent of the strength of stimulation—the now familiar all-or-none phenomenon. It is very rare to find two fundamental observations reported within twenty pages of an investigator's first report.

Now again his ingenuity displayed itself. In that paper was described a clock which he devised, the so-called "Bowditch clock." Here is one which

has been in the laboratory for many decades. The wheel at the top has projections which can be moved out so that you can stimulate or register at any time intervals. That was a result of his Leipzig experience. After he returned to this country he devised a new method of getting variations in the strength of the induced current from a secondary coil. Previously the secondary coil had been moved farther and farther away from the primary in order to weaken the current. Dr. Bowditch suggested that the secondary be withdrawn in this way until beyond the primary coil and that it then be horizontally rotated in order to diminish the strength of the current. In the published paper there is a scale pictured along the side of the primary and a continuation of the scale to indicate the degree of turning, just as in the particular instrument which I have here. I believe that this is the actual first instrument that he had made on that plan.

Another interesting device invented by Dr. Bowditch, which I would call attention to, was that of recording graphically the amount of water displaced from a plethysmograph by having the water run into a test tube which was supported by a wire spring. Such are some of the evidences of Dr. Bowditch's ingenuity as it appeared quite early in his career.

It was in April, 1871, that President Eliot renewed his invitation to join the Harvard Medical School. Although Dr. Bowditch received a letter from his uncle warning him not to give up any "rights" that he had and to be very cautious indeed how he expressed his willingness to return, he did decide to accept the offer, explaining, "On general principle I think it is best to take it for granted that people are going to do the

right thing." Thus he returned to the Medical School in the autumn of 1871. He had bought a lot of physiological apparatus in Germany, but when he arrived here he didn't find any place to put it. There were, however, two rooms in the attic of the old medical building on North Grove Street; in these two rooms he set up his instruments and made a physiological laboratory. Dr. Bowditch began as an Assistant Professor. There was no Professor. When asked whom he was assisting, he replied that he was "assisting himself." That was the fact, for he didn't have anybody to help him.

The teaching method which Dr. Bowditch followed was that which I suppose was fairly characteristic of German instruction of that date and perhaps much later. The lectures were very elaborate and finished. Important facts were carefully demonstrated. There was little reference to original sources. Of course, in time the lecturing became fairly routine, but in the early days I imagine that it was extremely stimulating. My teacher of Physics in the St. Paul High School had had the first year of Medicine in the Harvard Medical School, and the one outstanding experience in his memory was hearing Dr. Bowditch's lectures in the early 70's. They were, he said, the most stimulating and the most enthralling lectures. Dr. Bowditch was full of enthusiasm, vigor, and interest, and apparently put all of these qualities into his exposition. The lectures as we heard them in the late 90's had become fairly stereotyped. Indeed, a medical school student had taken very careful notes, had had them copied and type-written, and for something like five dollars, I think, you could get a complete set of the lectures and follow them almost word for word.

In 1889⁹ Dr. Bowditch withdrew from the greater part of instruction. It was about that time that the laboratory teaching had become strongly emphasized by Dr. W. T. Porter. As early as 1897 Dr. Porter had arranged a course of experiments for medical students. At that time Dr. F. S. Locke—of Locke's solution fame—was the Instructor in Physiology. We students used to sit at desks in a gallery (of very shaky construction) around the main laboratory. Dr. Locke, with his hands clasped behind his back as if plunged in profound thought, would walk about the gallery agitating everything and everybody every time he banged his heel on the floor. I still have in old records the heel marks of Dr. Locke's step. He was here from England for the period 1895-97, and returned there in 1897.

When the laboratory instruction became emphasized in 1899, a good deal of the demonstration material which Dr. Bowditch made so much use of was destroyed. I remember the sadness which came over him when he saw these pieces, which he had collected during thirty years, being thrown away or broken up. It was inevitable, but it was nevertheless a source of regret for him to see the old methods passing. One thing he initiated, however, which we are continuing to this day and which I think is fairly unique in the teaching here, and that is having the students get in contact with primary sources. In my day students were invited to prepare theses that were based on reading original articles. The theses were then read before the class and were discussed by Dr. Bowditch and by Dr. Porter. This was a very valuable exercise, in my opinion, and one which I think the students appreciate highly when they really get into the spirit of the first observers.

So much for the methods of teaching during Dr. Bowditch's term of service. Now regarding research. Dr. Bowditch brought back from Germany considerable apparatus serviceable for investigation. He had the two rooms in the attic of the North Grove Street Building of the Medical School. There he established the first laboratory of physiology, for the use of students, in the United States. We may say, perhaps more truly, that it was the first laboratory of experimental medicine in the United States, because almost every phase of experimental medical work now carried on in these great buildings about us was represented in the two simple rooms which Dr. Bowditch outfitted. There C. S. Minot carried on investigations in general biology. Dr. I. Ott and R. W. Lovett worked in experimental pharmacology, J. C. Warren in experimental pathology, G. Stanley Hall and W. F. Southard in experimental psychology, O. K. Newall in experimental surgery, and W. P. Lombard, J. J. Putnam (assisted by William James), C. S. Minot, G. M. Garland, C. H. Williams, J. W. Warren, F. H. Hooper, and F. W. Ellis in physiological researches. Dr. Bowditch's hospitality went so far as to welcome the early work in bacteriology. Some of the first studies of bacterial cultures in the United States were made by H. C. Ernst in the physiological laboratory.

Dr. Bowditch's own interests were very varied. He worked with Warren, as you all know, on the effect of the rate of stimulation on the smooth muscle of blood vessels, and showed that contraction and relaxation depended on how rapidly the nerves were excited. We have a good tradition in the laboratory for the interests of Dr. Forbes, Dr. Davis and Dr. Brunswick in the nature of the

nerve impulse, for Dr. Bowditch was for a time much concerned with "the changes which take place in those white glistening bands which are for us the only channels through which knowledge of the physical universe can be obtained and which also enable us to impress upon the world around us the evidence of our conscious personality." Some of the first proof of the indefatigability of the nerve trunk was obtained by him. He worked on the knee jerk with Warren. He worked on illusions with Stanley Hall. He was interested in anthropometry and did pioneer work in the study of the size and weight of children. Another interest which he had naturally enough in Boston was the defense of animal experimentation. Very early there arose a group of persons in this city who were very much opposed to the use of animals for experimental purposes. They wished to abolish "vivisection," but not being able to do that, they tried to have it limited. The labors of Dr. Bowditch in defending freedom of research were of very great importance. In an address before the Massachusetts Medical Society in 1896 he summarized as follows his reasons for opposing the bills which had been advocated: "(1) That the men in charge of the institutions where vivisections are practiced in this State are no less humane than those who desire to supervise their actions, while they are, at the same time, vastly better informed with regard to the importance of animal experimentation and the amount of suffering which it involves; (2) that no abuse of the right to vivisect has been shown to exist in these institutions; (3) that the governing bodies of these institutions possess both the will and the power to put a stop to such abuses should they arise; (4) and that the existing statutes fur-

nish sufficient protection against cruelty in vivisection as well as against cruelty in general." His hostility to any restrictive legislation some of his friends found difficult to understand. It was based on two considerations; first, as stated above, that the existing anticruelty laws are adequate to punish any experimenter who is wantonly cruel in the course of experimental procedures; and second, that the passage of restrictive legislation in England had not lessened but had increased the efforts of the antivivisectionists.

In the early history of the laboratory the traditions and the relations were German. Dr. Bowditch came from Leipzig and brought the spirit and methods of Ludwig with him. Ludwig was a very admirable and attractive human being. When Dr. Bowditch started home for the United States, Ludwig accompanied him to the train and kissed him farewell. There was always a deep affection between the men. The connection between Boston and Leipzig was renewed by Lombard who went from here to study with Ludwig. A story which Lombard tells is illustrative of the Ludwig tradition. Ludwig received the young man from the Harvard laboratory, gave him a place to work, set him a problem, presented the apparatus that was necessary, and started the experiments. Lombard completed the observations and handed in the report. Shortly thereafter Ludwig returned it, ready for publication, but almost entirely rewritten and with only Lombard's name at the head of it. "This isn't right," said Lombard, "You have written the article and your name ought to be on it." "No," the old man said, "you did the work; you should have the credit—but if you never do anything else people will think *I* did it."

In these intellectual relations, there is a reasonable way of regarding one's self, I think, as belonging to a family. I think of myself as being one of Dr. Bowditch's sons, and a grandson of Ludwig on one side, and of Jeffries Wyman on the other, with perhaps a great uncle in Claude Bernard. Dr. Forbes, Dr. Redfield, and Dr. Davis have brought in the English tradition. They are related also to Sherrington and Foster. It seems to me that we have in this laboratory a very rich inheritance in valuable traditions and influences which have come to us from these two great sources.

During the past fifty-five years the family of physiologists at the Harvard Medical School has become very large and the members have scattered widely to important posts. Before resigning his Professorship, Dr. Bowditch began a collection of photographs of persons who had served here or who had obtained their instruction here and then had gone forth to service elsewhere. This collection has been continued and now fills almost two volumes.

As I turn the pages I see Thomas Dwight, later Professor of Anatomy, and Charles S. Minot, later Professor of Embryology at the Harvard Medical School. Here are James J. Putnam and Thomas M. Rotch, later Professors of Neurology and of Pediatrics, respectively. Here is a photograph of G. Stanley Hall who founded the first laboratory for experimental psychology in the United States and who became President of Clark University. John W. Warren is here who was Professor of Physiology for many years at Bryn Mawr. Here is the face of W. P. Lombard, now Professor of Physiology *Emeritus* at the University of Michigan. And this is Dr. Howell's photograph as a young man—since then

Professor of Physiology at the Johns Hopkins University. Here is my friend G. N. Stewart, Professor of Physiology at Western Reserve, then at Chicago, and finally Professor of Experimental Medicine at Western Reserve. This is the photograph of F. H. Pratt, once Professor of Physiology at the University of Buffalo, now holding a similar position at Boston University. Here is C. C. Stewart, Professor of Physiology at Dartmouth. And this is R. S. Woodworth, head of the Department of Psychology at Columbia. The photograph of Albert Mathews, now Professor of Biological Chemistry at the University of Cincinnati recalls that we were instructors together about 1901 and that he then wagered that biochemists would be making protoplasm within ten years. He has since become more conservative in his outlook. This man in uniform is H. G. Beyer; he introduced into the Laboratory the idea that very hardy cats are Irish! This is the photograph of Ralph S. Lillie, once Professor of Physiology at Clark University and now Professor of Comparative Physiology at the University of Chicago. This is S. S. Maxwell, now Professor of Physiology at the University of California. Here is T. A. Storey, Director of the Department of Physical Training at the College of the City of New York. Here is John Auer, now Professor of Pharmacology at St. Louis University Medical School, and beside him is E. G. Martin, Professor of Physiology at Stanford. R. G. Hoskins is here, the Professor of Physiology at Ohio State University, and Dr. de La Paz of the Department of Pharmacology of the Philippine Medical School at Manila. This is Carl A. Hedblom, now Professor of Surgery at

Northwestern University. Here is the photograph of E. L. Porter, Professor of Physiology at the University of Texas, and this is L. B. Nice, head of the Physiology Department at the University of Oklahoma. Here is G. H. Bigelow, now Commissioner of Health of the Commonwealth of Massachusetts. This is W. L. Mendenhall, Professor of Pharmacology at Boston University. Here is F. A. Hartman, Professor of Physiology at the University of Buffalo. You will also find in the albums photographs of present members of the Department taken so many years ago that in some instances the features no longer look quite familiar! Here are Alvarez of the Mayo Clinic, Rappleye of San Francisco, New Haven and elsewhere, P. E. Smith of California, Griffith of Buffalo, Carrasco-Formiguera of Barcelona, Bliss of Montreal, Querido of Amsterdam, and Pereira of Sao Paulo, Brazil. It is a large and ever growing family. On the whole I think that it has performed a very creditable service in the development of medical science.

As we look back on the past it seems to me that one of the most striking features of the laboratory has been the variety of work that has been done here. Variety was characteristic of even the early days when Dr. Bowditch was "assisting himself." It was characteristic of the Leipzig laboratory. I am sure that if Dr. Bowditch were alive today and could see how greatly that variety has been extended—how the two attic rooms have developed into a laboratory of Comparative Physiology, a laboratory of Physical Chemistry applied to physiological problems, and a laboratory of Physiology in relation to Public Health—he would be deeply gratified.

VANDERBILT HALL

From the Alumni Committee on the Medical Dormitories to the Students of the Harvard Medical School

The funds for a dormitory which began with the contributions of medical students and medical graduates were increased by the gifts of their friends and finally became adequate through the generosity of Mr. Harold S. Vanderbilt. The building will be ready for occupancy, and will open its doors at the beginning of the next school year in September 1927.

The dormitory project outgrew the plans, the hopes and even the imagination of those who conceived it. From mere sleeping quarters for medical students it gradually acquired a dining room and living room, then a room for students' societies, a reading room and finally, thanks to Mr. Vanderbilt, a gymnasium. The dining room and the gymnasium will become available as the largest distinctively medical assembly halls in the United States.

As built now, the dormitory will accommodate two hundred and fifty students, but as planned for the future the dormitory will ultimately house four hundred students.

The building has been divided into seven units, each with its own staircase leading up from the courtyard open on the south to Longwood Avenue and the Medical School. In the "typical" units there are on each floor eight single rooms grouped about the staircase and the bath room across the corridor, so that there are two rooms on either side of the staircase in the front and two other rooms on either side of the bath room in the back.

Such an arrangement of rooms in pairs provides that the two students who occupy them can use them singly or they can open the door between, so as to use one room as a study and the other as a bedroom. Throughout the main part of

the building every other room has a fireplace. This arrangement of rooms allows students to apply for space singly or in groups of two, four, six or eight friends. The typical units in the corners of the building provide for a few suites with bedrooms, study and private bath designed for two, three or four students. Many of the rooms are wired for a telephone.

A wide variation will exist in the prices for the rental of these rooms.

The Vanderbilt Gymnasium with the five squash courts above it stamps the dormitory as unique. The rooms for special exercises which adjoin it will perhaps be used as laboratories for the study of the physiology of exercise.

The Henry Pickering Bowditch Dining Hall is stately and well proportioned. Here the faculty will lunch with the students. Lounges will be placed about one of the fireplaces, where before and after meals all men may congregate to promote sociability and to exchange ideas.

The Living Room is commodious. Its ample fireplace lends it a charm and makes it homelike. This room is appropriately named for Charles H. Best, who, as a medical student working with Banting; proved that an undergraduate can be a productive investigator.

The two large rooms and several of the smaller individual units are already named, but enough rooms are left to afford recognition for other students like Charles H. Best.

A considerable number of the smaller rooms have been given to the University in honor of physicians whose names were once household words. Some of these names will sound unfamiliar to their occupants, but these men were practitioners

ers of medicine of their time. They did not write books and few wrote papers, but their characters have been moulded into the health of their communities, large and small, and have left an impression on the lives of their patients, which lasts, and has found recognition here. They were the doctors who bore the burden and heat of the day, the doctors for whom schools of medicine were primarily created; they once occupied the places we, and eventually you too, will try to fill.

The Students' Club Room, seating about forty, provides a meetingplace for societies and with its own serving room directly above the main kitchen becomes ideal for private dinners.

These handsome rooms just described are not part of any ordinary dormitory, but President Lowell, with wise judgment and foresight, has insisted that our building be something more than a mere place in which to sleep and eat. It must be a home in which to live and the students must be attracted by its simple comforts. This led President Lowell to retain the fireplaces in the individual rooms.

The outside of the building is practically completed. Its Architects, Messrs. Coolidge, Shepley, Bulfinch and Abbott, have not only made it harmonize with its surroundings (the style is just the same as that of the Lying-In-Hospital opposite and across Avenue Louis Pasteur) but have made it beautiful in itself. Today it is only bricks and mortar, next September it becomes an institution dedicated by Mr. Vanderbilt to the health and comfort of the medical student.

On this rare site, there might have been erected a library, filled with books, which would represent the work of the past, but Mr. Vanderbilt preferred a

dormitory housed with living students who would do the work of the future. He wishes that medical students should learn for themselves that conservation of health even in the midst of strenuous work pays. The years of preparation for medicine are long; without health they become valueless later. He believed that if medical students could work in an atmosphere of health, that they would form habits of health and exercise which would enable them to take care of themselves and to be examples for their patients for life.

Mr. Vanderbilt put into our dormitory a gymnasium, but he has done far more, he has inserted in the curriculum of medical schools and in the doctor's pharmacopeia the science of exercise for the health of the graduate and the mature man.

YOU ARE A MEMBER OF THE ALUMNI ASSOCIATION

The policy of having all the Alumni of the Harvard Medical School members of the Association without the payment of any dues has long been in vogue. This makes it possible to give a wide circulation to the *Bulletin*. In addition to its chief aim of promoting contact between the Alumni and the School, the Association has for twenty years made donations to the Medical School and now supports five Alumni Assistants.

As you will see from the Treasurer's report these contributions have been made up by a very small proportion of Alumni. For example in 1926 only 10% of the Alumni contributed. The average amount they contributed was ten dollars.

Think this over, and when you receive your request for a subscription try to help make the Treasurer's job easy.

REPORT OF THE DIRECTOR OF SCHOLARSHIPS, LOANS AND EMPLOYMENT, 1925-26

Scholarships

Total number of scholarship applicants	133
Total number of scholarship awards	48

Classification of Scholarship Applicants and Awards According to Classes

FIRST YEAR	Applicants.....	40	Awards.....	16
SECOND YEAR	Applicants.....	38	Awards.....	13
THIRD YEAR.....	Applicants.....	34	Awards.....	13
FOURTH YEAR	Applicants.....	21	Awards.....	6
Total		133		48

Loans

Total number of loans made.....	36
Total amount of loans	\$ 2515.56
Total number of students aided by loans	30
(6 students had 2 loans)	
Total amount refunded during the year	1488.81
Total amount refunded during the year on 1925- 26 loans only	\$ 592.65
Total amount refunded on loans previous to 1925-26	896.16
	\$ 1488.81

Employment

Total number of applicants for positions	120
First Year	33
Second Year	27
Third Year	26
Fourth Year	18
	104
Graduates	14
Graduate Research Students	2
	120
Total Placements	55
Undergraduates	51
Graduates	4
	55
Total persons aided by positions	49
(6 persons held two positions)	
OPPORTUNITIES FOR GRADUATE POSITIONS.....	47
PLACEMENTS	5

Analysis of Opportunities and Placements

Institutional	21	Placements.....	2
General Practice	15	Placements.....	0
Missionary	2	Placements.....	0
Camp Physicians	1	Placements.....	1
Companion	2	Placements.....	1
Industrial	5	Placements.....	0
Ship Doctor	1	Placements.....	1
	<hr/>		<hr/>
	47		5

OPPORTUNITIES FOR UNDERGRADUATE POSITIONS	67
PLACEMENTS	51

Analysis of Opportunities and Placements

Hospital Work	26	Placements.....	18
Summer Camp	19	Placements.....	11
Companion	11	Placements.....	11
Board and Room	4	Placements.....	4
Library	2	Placements.....	2
Tutoring	2	Placements.....	2
Translation	1	Placements.....	1
Reference Work—			
Bibliography	1	Placements.....	1
Salesman	1	Placements.....	1
	<hr/>		<hr/>
	67		51

TOTAL NUMBER STUDENTS APPLYING FOR AID	267
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Applicants for Loans.....	30	Aided.....	30
Applicants for Scholarships	133	Aided.....	48
Applicants for Employment	104	Aided.....	51
	<hr/>		<hr/>
	267		129

62 students applied for 2 kinds of Aid.

3 students applied for 3 kinds of Aid.

Actual Number Students applying for Aid	199
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GEORGE P. DENNY,
Director.

TREASURER'S REPORT

Only a few of the Alumni were fortunate enough to attend the annual meeting of the Harvard Medical Alumni Association on June 23, 1926, and accordingly the Treasurer's Report made on that date is given below. It was voted at the meeting that the Alumni Assistants be paid, and as usual this was

done as shown in the supplementary report which was given to the council of the association in October 1926. The amount of money which this association raises and gives to the school each year is quite gratifying. It is, however, deeply to be regretted that only one Alumnus in ten is among the contributors as shown at the end of the report.

Dividends to Members, \$70,000

Harvard and Technology Graduates are
eligible for membership.

Dividends to Stockholders, \$00,000

Any year, past, present or future.

Moral: Join the Coop

The ten stockholders, who are members of the Faculty, hold the capital stock of the Society in trust and receive no dividends upon this stock. The only distribution of profits is made to members in this true co-operative enterprise. Why not join now and get the benefits of membership?

It costs one dollar to join the Coop for one year. You get a ticket with a number. Give your number every time you buy anything in the Coop which costs 25 cents or more. The total of your purchases is credited to your number at the end of the fiscal year. The profits are divided among the members on the basis of a fixed percentage on the total of purchases. A charge account may be arranged easily. It helps many graduates to buy by mail.

Harvard Co-operative Society

HARVARD SQUARE

Balance on hand July 1, 1925	\$ 2011.77
Received July 1—Oct. 31, 1925, on 1925 appeals	661.00
Received May 6—June 22, 1926, on 1926 appeals	3555.00
Interest on Bank Balance	18.18

\$ 6245.95

Expenditures

Oct. 24, 1925, for Alumni Assistants	\$ 2000.00
June, 1926, Balance paid 1925 Alumni Assistants	500.00
Part of Salary of Secretary in Appointment Bureau	464.94
1925, Addressing of Envelopes	12.21
1925 Luncheon at Annual Meeting	187.50
1926 Printing, addressing, etc., appeals	234.20
Aesculapiad Year Book for Appointment Bureau	5.00
Bank Charge	1.00

Total Expenditures 3404.85

Balance on hand, June 22, 1926, as per check book \$ 2841.10

Outstanding Bills

Harvard University for addressing envelopes	\$ 15.07	
Printing return post cards, Ellis Co.	107.32	122.39
		<hr/>
		\$ 2718.71

Report at the Fall Meeting, Oct. 28, 1926.

Balance on Hand June 23, 1926 (date of last report) as of check book	\$ 2841.10
Received June 23—June 30, 1926	35.00

\$ 2876.10

Expenditures, June 23—June 30, 1926

June 29, Alumni Assistants for fiscal year, 1925-1926	\$ 2500.00	
June 30, Printing return post cards	107.32	
June 30, Addressing and folding notices	15.07	
June 30, Luncheon June 23, 1926	187.50	\$ 2809.89

Balance on hand July 1, 1926, beginning of fiscal year
1926-1927, according to check book No. 25371 \$ 66.21

No outstanding bills.

Received July 1—Oct. 28, 1926, as result of 1925-1926
appeals 327.00

\$ 393.21

Expenditures, July 1—Oct. 28, 1926

Galley List Medical School	\$ 1.50	
Part salary of secretary to physician to Medical School students	50.00	\$ 51.50
Balance on hand, Oct. 28, 1926		<hr/>
		\$ 341.71

Total Contributors, 1922 402

Total Contributors, 1925 300

Total Contributors, 1926 336

Respectfully submitted,

ALBERT A. HORNOR, Treasurer.

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